WE CLAIM:

1. A long-term stabilized magnesium hydroxide suspension adapted to cover pellets of several kinds of materials to avoid their agglomeration when treated at high temperatures, which comprises a solids content of about 51% to 61%; a water content of about 39% to 49%; a viscosity of about 500 to 1,500 cp.; an average particle size of about 1 to 2.5 microns; a $Mg(OH)_2$ content of about 50% to 60%; a chloride content of less than about 0.6% on a dry basis; a calcium content of less than about 1% on a dry basis; a pH of about 10.5 to 12; an equivalent magnesium oxide content of about 34% to 42%; a specific gravity of about 1.42 to 1.52; and including at least one anionic polyelectrolyte as a dispersant agent, at a concentration of at least about 25%, in an amount of about 0.5 to about 2.5%, by weight, on a dry basis and an adherent compound having a concentration of at least about 30% in an amount of about 0.5 to about 5%, by weight, on a dry basis; adapted to being stored for at least three months without substantial agitation and without experiencing substantial settlement, while avoiding the formation of a solid, hard substrate.

2. The long term stabilized magnesium hydroxide suspension as claimed in claim 1, wherein the anionic polyelectrolyte is selected from the group consisting of sodium polyacrylate and ammonium polystyrene/maleate.

3. The long term stabilized magnesium hydroxide suspension as claimed in claim 1, wherein from about 5 to 15%, by weight, of the total of solids of the suspension have a particle size of about 5 to 10 microns; from about 30 to about 40% have a particle size of

about 2 to about 5 microns; from about 25 to about 35% have a particle size of about 1 to 2 microns and from about 20 to about 30% have a particle size of about 0.5 to 1 microns.

4. A long term stabilized magnesium hydroxide suspension adapted to cover pellets of several kinds of materials to avoid their agglomeration when treated at temperatures of between about 900°C to 1,000°C, which comprises a solids content of about 55%; a water content of about 44%; a viscosity of about 1,000 cp.; an average particle size of about 2.0 microns; a $Mg(OH)_2$ content of about 55%; a chloride content of about 0.30%; a calcium content of about 0.45%; a pH of about 11.7; an equivalent magnesium oxide content of about 38%; a specific gravity of about 1.47; and including at least one anionic polyelectrolyte as a dispersant agent, at a concentration of about 40%, in an amount of about 1%, by weight, on a dry basis and an adherent compound having a concentration of at least about 30% in an amount of about 1.5% to 2.0%, by weight, on a dry basis; adapted to being stored for at least three months without substantial agitation and without experiencing substantial settlement, while avoiding the formation of solid, hard substrate.

5. The long term stabilized magnesium hydroxide suspension as claimed in claim 4, wherein about 10% of the total solids of the suspension have a particle size of about 5 to 10 microns; 35% have a particle size of about 2 to 5 microns; 30% have a particle size of about 1 to 2 microns and 25% have a particle size of about 0.5 to about 1 microns.

6. The long term stabilized magnesium hydroxide suspension as claimed in claim 1, wherein the adherent compound is selected from the group consisting of styrene-acrylic emulsions.

7. A process for the production of a long-term stabilized magnesium hydroxide suspension from magnesium hydroxide solids, which comprises the steps of:

a) washing the magnesium hydroxide solids;

b) filtering and repulping the magnesium hydroxide solids to obtain agglomerated solid particles having less than about 0.6% of chloride values;

c) dispersing the agglomerated solid particles by comminuting in dispersing equipment to reduce their particle size to provide a dispersed product;

d) grinding the dispersed product to further reduce the particle size so that at least the 50% of the ground product has a particle size of about 2 microns;

e) adding an adherent compound, at a concentration of at least about 30% in an amount of about 0.5 to about 5%, by weight, on a dry basis;

f) dispersing the product of step e) in the dispersing equipment and;

g) adding at least one anionic polyelectrolyte as a dispersant agent, at a concentration of at least about 25%, in an amount of about 0.5 to 2.5%, by weight, on a dry basis.

8. The process as claimed in claim 7, wherein step b) is carried out at least three times.

9. The process as claimed in claim 7, wherein about 50% of the dispersed product has a particle size of about 4.0 microns and comprising crystals of agglomerated $Mg(OH)_2$ having a crystal size of about 0.4 microns.

10. The process as claimed in claim 7, wherein the dispersing equipment used in step c) has a cutting disc rotating at about 1,200 to 3,000 RPM.

11. The process as claimed in claim 7, wherein step c) is carried out for about 20 to 30 minutes.

12. The process as claimed in claim 7, wherein step d) is carried out in a sand mill using zirconium silicate or stainless steel balls having a diameter less than about 1.5 mm.

13. The process as claimed in claim 7, wherein the anionic polyelectrolyte is selected from the group consisting of sodium polyacrylate and ammonium polystyrene/maleate, whereby the stability of the suspension is improved by providing the particles with electric charges which reduces their tendency to agglomerate and settle out.

14. The process as claimed in claim 7, wherein the dispersing equipment used in step f) includes a stainless steel cutting disc.

15. The process as claimed in claim 7, wherein the dispersing equipment used in step f) includes a polypropylene cutting disc.

16. The process as claimed in claim 7, wherein the adherent compound is added in an amount of about 1.5% to 2.0%, by weight, on a dry basis.

17. The process as claimed in claim 7, wherein the adherent compound is selected from the group consisting of styrene-acrylic emulsions.